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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/945,345	08/30/2001	Jack Yiu-Bun Lee	CUH-005.01	1501

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EXAMINER	
DAVIS, CYNTHIA L	

ART UNIT	PAPER NUMBER
2665	

DATE MAILED: 04/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/945,345	LEE, JACK YIU-BUN	
	Examiner	Art Unit	
	Cynthia L Davis	2665	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 2-21 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 2-21 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 30 August 2000 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claim 12 objected to because of the following informalities: for the sake of clarity, the numerals D, R, and M need to be defined as, for example, positive integers. Appropriate correction is required.

Claim Rejections - 35 USC § 102

> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 2, 5-7, 11, 12, 14, and 20 are rejected under 35 U.S.C. 102(e) as being anticipated by Zehavi.

Regarding claim 2, initiating transmission of an intended group of packets, the intended group of packets including a set of data and error-correcting information for the set of data is disclosed in Zehavi, column 4, lines 59-60. Receiving an indication of at least some data, of the set of data, that failed to be correctly received at a receiver is disclosed in Zehavi, column 4, lines 61-63. In response to the indication, retransmitting a second group of packets, the second group of packets comprising less than all data, of the set of data that failed to be correctly received at the receiver, wherein less than all data that failed to be correctly received at the receiver is retransmitted in the retransmitting step, and the receiver will be able to obtain the all data, of the set of data, that failed to be correctly received at the receiver by performing error correction with the retransmitted second group of packets, once received, and correctly received portions

of the intended group of packets, as received from the transmission that was initiated in the initiating step is disclosed in Zehavi, column 10, lines 12-16.

Regarding claim 5, the transmission of the intended group of packets to the receiver is not over the Internet is disclosed in Zehavi, column 1, lines 57-61, disclosing that the system is specifically designed for a CDMA cellular network.

Regarding claim 6, retransmitting is a unicasting is disclosed in Zehavi, column 10, lines 12-16 (the replacement frames are sent only to the requesting station).

Regarding claim 7, the indication is received, in the receiving step, via a unicast from the receiver is disclosed in Zehavi, column 10, lines 10-11.

Regarding claim 11, some packets of the intended group of packets were not correctly received at the receiver; and the method further comprises identifying a minimally-sized set of packets, of the some packets that were not correctly received at the receiver, that would enable recovery at the receiver of all data of the set of data not correctly received at the receiver is disclosed in Zehavi, column 10, lines 12-16.

Regarding claim 12, the intended group of packets includes D intended data packets and R intended redundancy packets and no other data packets or redundancy packets; M packets of the intended group of packets were not correctly received at the receiver, wherein M is greater than R; and the step of identifying a minimally-sized set of packets comprises identifying a set of M minus R packets, of the M packets that were not correctly received at the receiver is disclosed in Zehavi, column 10, lines 12-16 (M-R would be the number of packets not able to be reconstructed from the received packets).

Regarding claim 14, at the receiver: receiving the retransmitted second group of packets; and performing erasure correction on the second group of packets and the correctly received portions of the intended group of packets whose transmission was initiated in the initiating step to thereby obtain the all data of the set of data that failed to be correctly received at the receiver is disclosed in Zehavi, column 10, lines 12-16 (disclosing the second group of packets) and column 8, lines 19-24 (disclosing erasure correction).

Regarding claim 20, means for initiating transmission of an intended group of packets, the intended group of packets including a set of data and error-correcting information for the set of data is disclosed in Zehavi, column 4, lines 59-60. Means for receiving an indication of at least some data, of the set of data, that failed to be correctly received at a receiver is disclosed in Zehavi, column 4, lines 61-63. In response to the indication, means for retransmitting a second group of packets, the second group of packets comprising less than all data, of the set of data that failed to be correctly received at the receiver, wherein less than all data that failed to be correctly received at the receiver is retransmitted in the retransmitting step, and the receiver will be able to obtain the all data, of the set of data, that failed to be correctly received at the receiver by performing error correction with the retransmitted second group of packets, once received, and correctly received portions of the intended group of packets, as received from the transmission that was initiated in the initiating step is disclosed in Zehavi, column 10, lines 12-16.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 3, 4, 8, 15, 16, 18, 19, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zehavi in view of Chou.

Regarding claim 3, the communication system comprises a residential broadband network is missing from Zehavi. However, Chou discloses in column 1, lines 14-20, transmitting media to home subscribers in a system that uses error correction and retransmission. It would have been obvious to one skilled in the art at the time of the invention to use the method of Zehavi in a residential broadband network. The motivation would be to use the method of Zehavi commercially for home subscribers to the internet.

Regarding claim 4, the set of data is a portion of a video, and the transmission is a portion of a multicast of the video is missing from Zehavi. However, Chou discloses in column 1, lines 21-22 and 25-27, multicasting of video signals. It would have been obvious to one skilled in the art at the time of the invention to use the method of Zehavi to correct errors in a video multicast. The motivation would be to use the method of Zehavi commercially for home subscribers of video content.

Regarding claim 8, at the receiver: sending the indication, wherein the indication indicates less than all data, of the set of data, that failed to be correctly received at the receiver, wherein the retransmitting step includes retransmitting all data indicated in the

indication is missing from Zehavi. However, Zehavi does disclose in column 10, lines 12-16, the transmitter deciding which packets, which are less than all of the lost data, to resend in response to a retransmission request. Also, Chou discloses in column 10, line 66-column 11, line 2, the receiver in a system deciding which packets out of a set of lost packets it needs replacements for, and getting those packets from the transmitter. It would have been obvious to one skilled in the art at the time of the invention to have the receiver decide which packets it wants retransmitted from the transmitter. The motivation would be to allow the individual receivers to decide what quality of transmission they require, so as to avoid congestion on their particular connection (see Chou, column 2, lines 41-45).

Regarding claim 15, receiving packets from a packets, wherein the group of packets include data and error-correction information for the data is disclosed in Zehavi, column 4, lines 59-60. If packets received without error in the receiving step include less than all the data whereby some of the data has been lost, hereinafter referred to as lost data then: sending a message based on identity of at least some of the lost data is disclosed in Zehavi, column 4, lines 61-63. Receiving a retransmission triggered by the sent message, wherein the retransmission includes less than all of the lost data; and recovering all of the lost data using information from the packets received without error in the receiving packets step and using the received retransmission is disclosed in Zehavi, column 10, lines 12-16. The packets being multicast is missing from Zehavi. However, Chou discloses in column 1, line 26, multicasting of packets in a network. It would have been obvious to one skilled in the art at the time of the invention to use the

system of Zehavi in a multicast network. The motivation would be to correct the errors in a multicast transmission.

Regarding claim 16, the message identifies and requests retransmission of less than all lost data packets of the multicasted group of packets is missing from Zehavi. However, Zehavi does disclose in column 10, lines 12-16, the transmitter deciding which packets, which are less than all of the lost data, to resend in response to a retransmission request. Also, Chou discloses in column 10, line 66-column 11, line 2, the receiver in a system deciding which packets out of a set of lost packets it needs replacements for, and getting those packets from the transmitter. It would have been obvious to one skilled in the art at the time of the invention to have the receiver indicate to the transmitter which packets it wants to have retransmitted. The motivation would be to allow the individual receivers to decide what quality of transmission they require, so as to avoid congestion on their particular connection (see Chou, column 2, lines 41-45). The retransmission includes retransmission of the less than all lost data packets of the multicasted group of packets is disclosed in Zehavi, column 10, lines 110-16.

Regarding claim 18, an intended group of packets includes a set of data and error-correcting information for the set of data is disclosed in Zehavi, column 4, lines 59-60. The server is configured: to receive a message indicating specific packets of the intended group of packets, wherein the specific packets were lost to a receiver in transmission is disclosed in Zehavi, column 4, lines 61-63. In response to the message, retransmit a second group of packets, the second group of packets comprising less than all data of the set of data that were lost to the receiver in transmission is disclosed in

Zehavi, column 10, lines 12-16. A server that multicasts video data to a plurality of receivers in groups of packets, wherein the server is coupled to a broadband communication network is missing from Zehavi. However, Chou discloses in column 1, lines 21-28, a multicast video transmission in a broadband network. It would have been obvious to one skilled in the art at the time of the invention to use the method of Zehavi in for a multicast video transmission such as is disclosed in Chou. The motivation would be to use the method of Zehavi commercially for home subscribers to video feeds on the internet.

Regarding claim 19, the server is configured such that the second group of packets includes all the specific packets indicated by the message is missing from Zehavi. However, Zehavi does disclose in column 10, lines 12-16, the transmitter deciding which packets, which are less than all of the lost data, to resend in response to a retransmission request. Also, Chou discloses in column 10, line 66-column 11, line 2, the receiver in a system deciding which packets out of a set of lost packets it needs replacements for, and getting those packets from the transmitter. It would have been obvious to one skilled in the art at the time of the invention to have the receiver indicate to the transmitting server which packets it wants retransmitted. The motivation would be to allow the individual receivers to decide what quality of transmission they require, so as to avoid congestion on their particular connection (see Chou, column 2, lines 41-45).

Regarding claim 21, means for receiving packets from a group of packets, wherein the group of packets include data and error-correction information for the data

is disclosed in Zehavi, column 4, lines 59-60. Means for, if packets received without error in the receiving step include less than all the data whereby some of the data has been lost, hereinafter referred to as lost data: sending a message based on identity of at least some of the lost data is disclosed in Zehavi, column 4, lines 61-63. Receiving a retransmission triggered by the sent message, wherein the retransmission includes less than all of the lost data; and recovering all of the lost data using the retransmission and using information from the packets received without error in the receiving packets step is disclosed in Zehavi, column 10, lines 12-16. The packets being multicast is missing from Zehavi. However, Chou discloses in column 1, line 26, multicasting of packets in a network. It would have been obvious to one skilled in the art at the time of the invention to use the system of Zehavi in a multicast network. The motivation would be to correct the errors in a multicast transmission.

4. Claims 9, 10, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zehavi in view of Chou in further view of Ayanoglu.

Regarding claim 9, the sending step is initiated without waiting for all packets of the intended group of packets to either arrive at the receiver or be determined as being lost to the receiver is missing from Zehavi. However, Ayanoglu discloses in column 5, lines 52 and 57-58, a system that requests retransmission when the number of errors exceeds a threshold, which may occur before all of the group of packets arrives. It would have been obvious to one skilled in the art at the time of the invention to request retransmission before all of the packets had arrived. The motivation would be to

request retransmission as soon as the system becomes aware that it is necessary, so as to have to correct data on hand sooner.

Regarding claim 10, the retransmitting step is initiated before every packet of the intended group of packets has either arrived at the receiver or been lost to the receiver is missing from Zehavi. However, Ayanoglu discloses in column 5, lines 52 and 57-58, a system that retransmits when the number of errors exceeds a threshold, which may occur before all of the group of packets arrives. It would have been obvious to one skilled in the art at the time of the invention to retransmit before all of the packets had arrived. The motivation would be to retransmit as soon as the system becomes aware that it is necessary, so as to have to correct data on hand sooner.

Regarding claim 17, the sending step includes sending at least a portion of the message, even before every packet of the multicasted group of packets has either arrived at the receiver or been determined as lost to the receiver is missing from Zehavi. However, Ayanoglu discloses in column 5, lines 52 and 57-58, a system that requests retransmission when the number of errors exceeds a threshold, which may occur before all of the group of packets arrives. It would have been obvious to one skilled in the art at the time of the invention to request retransmission before all of the packets had arrived. The motivation would be to request retransmission as soon as the system becomes aware that it is necessary, so as to have to correct data on hand sooner.

5. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Zehavi in view of Ayanoglu. At the receiver; initiating sending at least a portion of the indication if at least R plus one packets of the intended group of packets were not correctly

received at the receiver, even before every packet of the intended group of packets has either arrived at the receiver or been determined as being lost to the receiver is missing from Zehavi. However, Ayanoglu discloses in column 5, lines 52 and 57-58, a system that requests retransmission when the number of errors exceeds a threshold. It would have been obvious to one skilled in the art at the time of the invention to request retransmission when the number of errors exceeds the threshold R. The motivation would be to request retransmission as soon as the system becomes aware that it is necessary, so as to have to correct data on hand sooner.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cynthia L Davis whose telephone number is (571) 272-3117. The examiner can normally be reached on 8:30 to 6, Monday to Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on (571) 272-3155. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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3/25/2005

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ALPUS H. HSU
PRIMARY EXAMINER